

ONLINE ORDERING SYSTEM OF PCK ENGINEERING

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ABSTRACT

Online Ordering System of PCK Engineering is an web-based system that helps PCK Engineering to manage their business digitally, and allow customer to make order online. As one of the largest and fastest growing company, online enterprise system becoming a need compared to manual method. Therefore, this system has been developed to helps PCK Engineering to manage their sales and services online. It is a better approach to optimize the relationship between PCK Engineering and customers. There are two target users in this system, admin staff and the customers of PCK Engineering. The system consists of ten modules: login and registration, customize stock specification, make appointment and order, manage order and profile, search product, manage stock and specification, approve order and appointment, advisory administration for admin side function, LiveChat and sales report. Rapid Application Development (RAD) model has been used in this project. The four phases are requirements planning, user design, construction and cutover. The implementation of interface and coding to each module in the system has been completed. The testing shows that the acceptance criteria of the system has achieve the objectives of this project.

ABSTRAK

Sistem talian pesanan *PCK Engineering* adalah sistem web yang membantu *PCK Engineering* untuk menguruskan perniagaan mereka secara digital, dan membenarkan pelanggan untuk membuat pesanan atas talian. Sebagai salah satu syarikat yang paling cepat berkembang dan terbesar, perusahaan sistem atas talian menjadi keperluan berbanding dengan kaedah manual. Oleh itu, sistem ini telah dibentuk untuk membantu *PCK Engineering* untuk menguruskan jualan dan perkhidmatan mereka secara online. Ia adalah satu pendekatan yang lebih baik untuk mengoptimumkan hubungan antara *PCK Engineering* dengan pelanggan. Terdapat dua pengguna sasaran dalam sistem ini, iaitu staff dan pelanggan. Sistem ini terdiri daripada sepuluh modul: pendaftaran masuk, pemilihan spesifikasi produk, membuat temujanji dan tempahan, mengurus tempahan dan profil, pencarian produk, menguruskan produk dan spesifikasi, meluluskan pesanan dan temujanji, pentadbiran forum untuk fungsi staff, *LiveChat* dan laporan jualan. *Rapid Application Development (RAD)* telah digunakan dalam projek ini. Terdapat empat tahap iaitu perancangan keperluan, rancangan pengguna, pembinaan dan pengubahsuaian.. Pelaksanaan antara muka depan dan pengekodan bagi setiap modul dalam sistem telah selesai. Ujian yang telah dijalankan menunjukkan bahawa sistem ini berjaya mencapai matlamat dan objektif projek ini.

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LIST OF ABBREVIATIONS

PHP	Hypertext Preprocessor
ASP	Active Server Pages
JSP	Java Server Pages
IDE	Integrated Development Environment
SQL	Standard Query Language
HTTP	Hypertext Markup Language
IIS	Internet Information Services
RAD	Rapid Application Prototype
RUP	Rational Unified Process
UAT	User Acceptance Testing
OOSPE	Online Ordering System of PCK Engineering

CHAPTER 1

INTRODUCTION

This chapter briefly discuss on the overview of this research. It contains five sections. This first section is background; follow by the problem statement. Next are the objectives where the project's goal is determined. After that are the scopes of the system and lastly is the thesis organization which describes the structure of this thesis.

1.1 Background

Internet is very important to us nowadays because it plays an important role in our life no matter in what aspect. People had experienced that today's technology is progressing faster than anyone has ever expected and is changing the way people live in their lives. Consequently, the usage of internet is expanding and become more and more powerful like for example downloading files, search information or even online shopping. In a study of Yang and Tung (2004) internet provides a new communication medium that enables access to vast amounts of information across a wide variety of topics. These advantages eventually attract many business companies to make full use of these services when dealing with customers. Unfortunately the growth of the online services in local industrial companies business is still not convincing in our country compare to other international companies.

When come to industry, most of the people feel that industrial work is more technical based and rely on hand on task. It is hard to describe and express in a verbal way or using natural language. It is a great challenge for the industrial side companies to put their sales or services online. PCK Engineering is one of industrial companies that facing these problems. Previously their customers prefer to call for booking appointment, make orders and customer support. However, as technology in this era has greatly improved, more and more customers prefer ecommerce. Online shopping market increased very fast since the early of 1990's and it has been indicated that the internet are changing the way of customers purchasing. According to a recent report by Forrester and Shop.org, the value of online sales in US was \$219.9 billion in 2006, which are representing 6% of total retail sales in 2006 (Li, 2009). Through ecommerce, customers not only can save their time and cost, at the same time they can get what they wanted as well. Not only that, through ecommerce, company managed to evaluate all aspects of organization and performance (Tan et al., 2009).

Therefore, the Online Ordering System of PCK Engineering is developed to ease the company's customers when dealing with the company. The system will provide basic information and the background of the company such as location and contact and some basic history of the company. The system is strictly controlled by the admin of the company. Only trusted customers are allowed to maintained membership although registration is open to public. Admin are authorized to delete any members who do not have business and moral ethnic from membership immediately. Customer can manage their own profile and stock order list.

1.2 Problem Statement

PCK Engineering is a contractor and supplier of oil and gas as well as shipbuilding and involve in design, engineering and drafting services. They deal with other country like Middle East Saudi Arabia in upgrading electrical power station project. However, previously they do not optimize the usage of internet services on their business which means to start online business although they have been doing sales for so many

years. Until recently, they finally come to a conclusion to expand their business network. Hopefully through internet they can improve their visibility and thus to enlarge their business to earn more profit.

1.3 Objectives

The objectives of this project are:

- i) To design and develop an online ordering system of PCK Engineering
- ii) To apply text-based information retrieval using keyword matching based on keyword occurrence.

1.4 Scopes

The scopes of this project are:

- i) User
 - a. The system can register the customers in the database and manage by admin.
 - b. The system can provide online stocks overview that allows customers to order.
 - c. The system can provide customers to make appointment for further discussion or to collect their order.
 - d. Customer can manage and update their profile themselves.
 - e. The system can provide support forum platform for customers to discuss critical issues or giving and getting feedback from others.
- ii) Admin
 - a. The system can provide simple basic information and the background of the company.

- b. Current products specification can be updated and new items can be added by admin too.
- c. Appointment will have to wait to be approved by admin.
- d. The forum topic and comment is control and manage by admin.
- e. Admin can manage their members and their sales.
- f. Admin can view their sales report.

1.5 Thesis Organization

This thesis consists of three chapters such as Chapter 1 is Introduction, Chapter 2 is Literature Review, and Chapter 3 is Methodology.

Chapter 1 is to introduce about the Online Ordering System of PCK Engineering. This chapter contains five parts. First part is the introduction of the project to explain briefly about the system and the related issues. Second part is highlighting the problems of the manual system which prompt a new system to be developed. Third part is listing down the objectives for developing the system. Forth part is to discuss on the scope of the system according to the objectives. Last part is the summaries of the sequence for each chapter in the thesis.

Chapter 2 is to explain about the review for the Order and Support System for PCK Engineering. This chapter is divided into two sub-reviews that require the students to study to get complete information about the order and support system. The first sub-review requires the student to review and explain about the researches that had been developed by others or/and present computer projects which are related to the current project. The second sub-review is to explain about the technique/ method/ equipment or technology that can be used in constructing the project.

Chapter 3 is to discuss about the approach and framework for the project. In the content, it included the method, technique or approach that will be used and have been used in designing and implementing the Online Ordering System of PCK Engineering.

This chapter also explains about the justification of method or approach used and both the hardware and software needed for the project.

Chapter 4 is for the documentation of all the process that is involved in the development of the project. This chapter highlights generally about the designed project development and shows the content of the method on how the database and table that had been designed were included through SQL instruction and the source code for developed the designated user's interfaces.

Chapter 5 is to explain about the results and data analysis that had been acquired. In the explanation, it must include result analysis, project limitation, also suggestion and project enhancement. The result analysis must be explained so that the objective is parallel with the project's problem. The project limitation must be elaborated about development constraints and system constraints of the project. The suggestion and project enhancement part are included in the knowledge discussion or contribution for future improvement on the research.

1.6 Summary

Basically this chapter is to introduce the concept of Online Ordering System of PCK Engineering (OOSPE). The background is stated with simple explanation and the problem statement is made. There are two objectives in this project and the scopes of this project consists of two parties which is user and admin.

CHAPTER 2

LITERATURE REVIEW

This chapter briefly describes the review on existing techniques related with Order and Support System that will be developed later. This chapter comprises four sections: The first section describes the comprehensive review on existing related systems. Then, the second section will be describing the development tools. Third section describes the review on method, equipment, and technology that are previously used in the same domain. Last section will be focus on the methodology.

2.1 Online Ordering System of PCK Engineering

An order management system, or OMS, is a computer software system used in a number of industries for order entry and processing. Orders can be received from business, consumers, or a mix of both, depending on the product. Offers and prices for particular product maybe available via catalogues, websites or broadcast advertisements.

Nowadays, there is several business domains which use OMS for different purposes but the core reason remain the same. One of the business domain that using OMS comes from retails. Large retails companies use OMS to keep track of orders to the system, change, cancel, and update their orders. An OMS should also allow ones to access information on orders entered into the system, including details on all orders and previous completed orders.

A support system is a network of facilities and people who interact and remain in informal communication for mutual assistance. It can also be define as a network

of personal or professional contacts available to a person or organization for practical or moral support when needed. Support system is there to help ones to solve their problem faced by providing professionals or expert's advice, through discussion, user manual or person to contact. There will be a forum or discussion room for customer or clients to raise their question in order to seek for solutions. Other than that, some of them will provide a user manual for the client to download so that they can get better understanding of the stock that they purchase. Or, they can even contact the person in charge to look for solutions.

Combining order management system and support system together ,we come out with the order and support system. In order and support system, the system will able to accept the order from clients and provide support or help to the client when they met problems.

Since this is an order and support system, it is important that the owner have to maintain his or her stock's quantity so that he or she can continuously receive the order from clients. Thus, it is important to be aware of the amount of stocks so that he or she can continuously supply the stock to the clients. Owner has to control and manage their stock from time to time.

2.2 Systems that Similar with Order and Support System

There are a lot of sales and support system online and the best three that are similar with the Online Ordering System of PCK Engineering function were chosen to do critique and comparison.

2.2.1 National Instruments Corporation System

The National Instruments Corporation System mainly sell design, prototype, and deploy systems that involve different of engineering and science field.

The National Instruments Corporation System main page as shown in Figure 2.1 (National Instrument Corporation System, 2011a) consists of navigation bar that link to other function of the system. It provide login and account registration function on the page. It also provides account and profile setting for existing user. Search tools are prepared for user to search specific information. International call is available for user to contact their company instantly by clicking the link at the page.

The main page eases the existing user to login, account and profile setting. The navigation bar is well organized to increase the usability of the system. But the system lack of brief introduction of the company and instruction to guide them at the main page and eventually will confuse the user which is first time visiting.

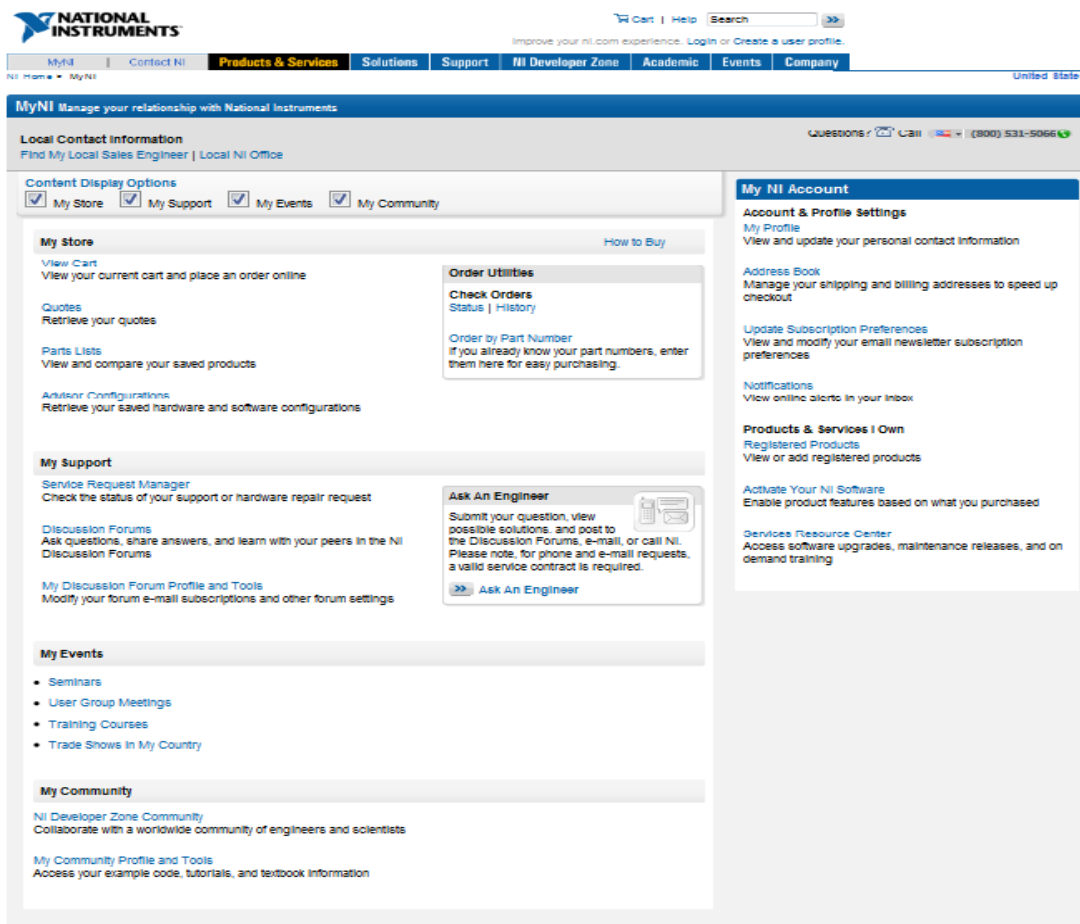


Figure 2.1: National Instruments Corporation System - Main Page (National Instrument Corporation System,2011a)

The National Instruments Corporation System solution page as shown in Figure 2.2 (National Instrument Corporation System, 2011b) consists of various type of solution article for the user to view and study. Those articles are gather from all over the world wrote by experts. The solution articles are categorized and place it on the side bar for the user to select. Search tools are prepared for user to search specific solution in the database.

There is a large database full of solution all around the world for the user to search for solution. And it provides direct access to view those solutions free. But it is quite hard and waste of time to read the whole article just to get a step of solution at the end from the article. It does not provide simple step by step guidance for some common solutions.

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1-10 of 338 Show 10 20 30 results per page 1 2 3 4 5 6 7 8 9 10 Next

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Figure 2.2: National Instruments Corporation System - Solution Page (National Instrument Corporation System, 2011b)

The National Instruments Corporation System support page as shown in Figure 2.3 (National Instrument Corporation System, 2011c) consists of resources for all kind of technical support function. For example, the resources categorize into product manuals, drivers and updates, knowledgebase, tutorials, discussion forums and example code. It also provide support service assistance that enable user to call in enquire, email and others. Search tools are prepared for user to search specific service available and famous searches shown. And user can download all the manual or driver free of charge.

User able to get support easily from different platform provide from the system that ease the user from different background. But too many supports sometimes will confuse the user which one is the best to choose and different resources provide different support too.

Technical Support

By Product

Product Search
eg PXL-195

Most Popular Searches

Software	Hardware Driver	Hardware
LabVIEW	NI-DAQmx	USB-6008
DIAdem	NI-VISA	PCI-6251
LabWindows/CVI	NI 489.2	PCI GPIB
Measurement Studio	NI Vision Acquisition	GPIB-USB-HS
Multisim	NI-Motion	PCI-7120
TestStand		cRIO-9012

Browse By Resource

- Product Manuals**
View the most up-to-date manuals, installation guides, and release notes for your product.
- KnowledgeBase**
Browse common questions and answers, with illustrations and step-by-step instructions.
- Discussion Forums**
Ask questions, share answers, and learn with your peers in the NI Discussion Forums.
- Drivers and Updates**
Download the latest drivers and software updates to optimize your system performance.
- Tutorials**
Expand your product knowledge with thousands of tutorials, white papers, and demonstrations.
- Example Code**
Find example code to get started quickly or add new functionality to your applications.

My Support Services

Get Assistance

- Phone an Engineer
- Email an Engineer
- Software Updates and On-Demand Training
- Service Request Manager
- Discussion Forums
- Customer Service

Resources

Support Services

- Standard Service Program (SSP)
- Training
- Certification
- Calibration

Related Resources

- Product Activation
- Product Registration
- Hardware Installation/Configuration Troubleshooter
- Support Holidays

Support Utilities

- Accuracy Calculator
- DAQ Diagnostics
- Dimensional Drawings

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Figure 2.3: National Instruments Corporation System - Support Page(National Instrument Corporation System, 2011c)

2.2.2 Microscan System

Microscan system is mainly focus on precision data acquisition and control solutions serving a wide range of automation and OEM applications.

The Microscan System main page as shown in Figure 2.4 (Microscan, 2011a) consists of navigation bar that link to other function or section of the system. It provides changing language function. Latest company news also appears at the main page wall. Search tools are prepared for user to search specific information.

The system provides different type of languages pack that able to change according to the understanding of users. Colourful banner and flash able to attract first time visit user. But the system do not provide user registration and user login function.

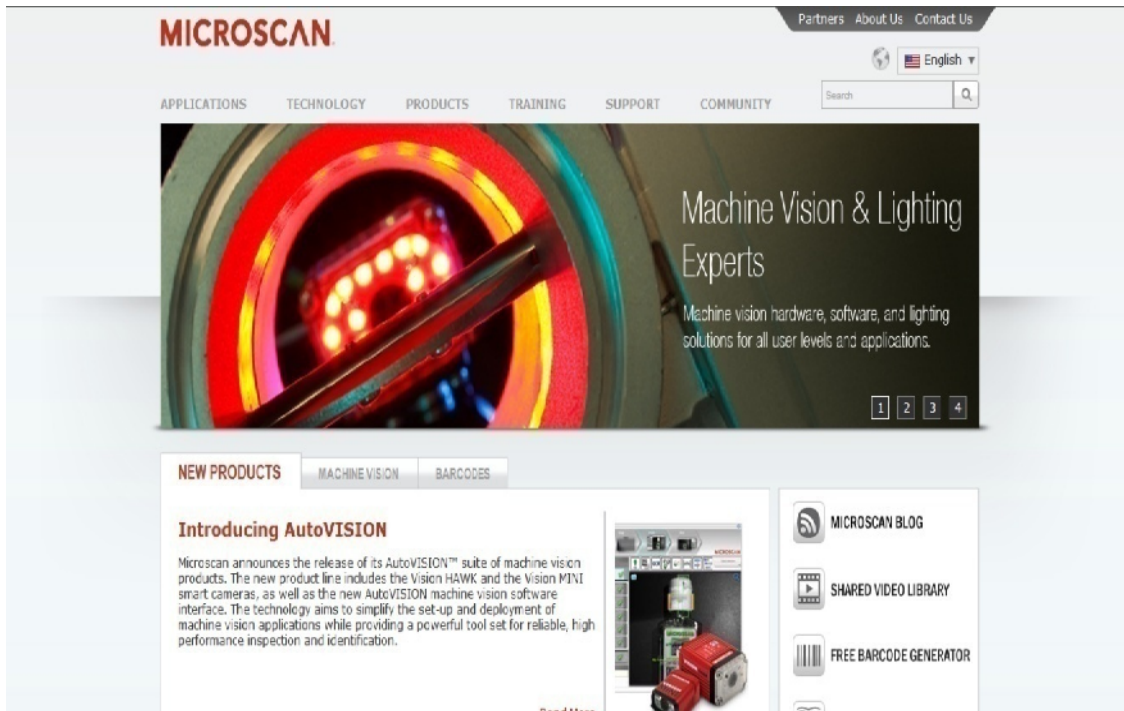


Figure 2.4: Microscan System - Main Page (Microscan, 2011a)

The Microscan System product overview page as shown in Figure 2.5 (Microscan, 2011b) consists of overview of product with all kind of product information and can view the full details of the product by pressing the link on the icon of the product. It categorize out to several type of product.

All the product is shown in grid view with the details of each product is also clearly stated out. But no product customization and choosing specifications function for the users.

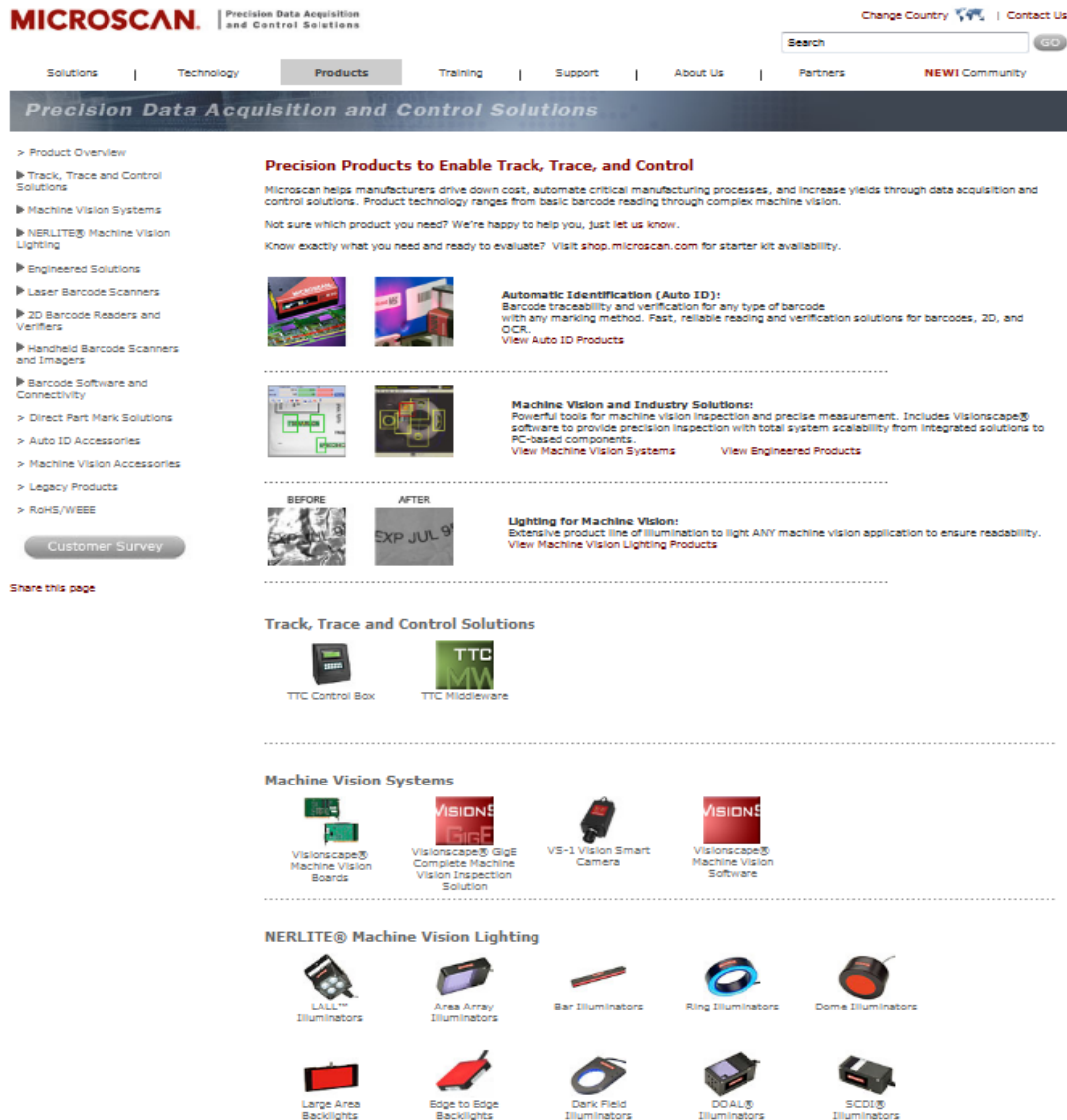


Figure 2.5: Microscan System - Product Overview Page (Microscan, 2011b)

The Microscan System solution page as shown in Figure 2.6 (Microscan, 2011c) consists of all the solution from different field that related to the product from different aspect. Clear explanation with picture is shown.

The solution is simple and easy to understand by users. Clear explanation with picture is shown for the user to have a clear picture what is going on in the real case.